

VIRGINIA POLLUTION ABATEMENT

PERMIT APPLICATION

FORM D

MUNICIPAL WASTE

PART D-I MUNICIPAL EFFLUENT

PART D-II MUNICIPAL SLUDGE - INFREQUENT APPLICATION

PART D-III MUNICIPAL SLUDGE - FREQUENT APPLICATION

Contact the Department of Environmental Quality's Regional office if instructions beyond those provided in the form are required.

Department of Environmental Quality

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

FORM D

MUNICIPAL WASTE

PART D-I LAND APPLICATION OF SEWAGE EFFLUENT

General Information

1. Facility Name. Name given on Form A.
2. Briefly describe the design and provide a line drawing of the wastewater treatment facility which relates the various components of the treatment system including source(s), treatment unit(s) disposal alternatives and flow estimates from the various process units.
3. Briefly describe the disposal of any solid or sludge waste materials.
4. List all industrial contributors to the wastewater treatment facility.
5. Submit a copy of any leasing agreements related to the treatment works and the use or management of the application fields not under direct ownership of the applicant.
6. All Privately Owned Treatment Works (PVOTW) designed to serve 50 or more residences must be registered with the State Corporation Commission (SCC) prior to applying for a permit. Provide a copy of the SCC Certificate of Incorporation (for Virginia based operations) or the Certificate of Authority (for out of state operations) with the application.

Design Information

Note: This section should be completed for each alternative effluent application system.

Waste Characterization

7. Provide the design flow of the wastewater treatment plant.
8. Provide a sewage effluent characterization in accordance with Part D-IV of the application. For a proposed facility, estimates based on data obtained from other similar facilities may be used. More than one sample may be required if the effluent may be expected to exhibit diurnal or seasonal variation.
9. Provide calculations describing the nutrient value of the effluent as mg/l nitrogen (PAN), phosphorus (P_2O_5), potassium (K_2O) and any liming effects which may occur from land application.

Storage and Land Application Requirements

10. Provide calculations justifying storage and land area requirements for wastewater application including an annual water balance on a monthly basis incorporating such factors as precipitation, evaporation, evapotranspiration, soil hydraulic conductivity, wastewater loading, dry periods, and monthly storage (input and drawdown). Provide daily, weekly and annual hydraulic loading rates (maximum and average).

All facilities must be designed and operated to prevent any discharge to State waters except in the event of a 25 year, 24 hour or greater storm event. DEQ recommends the storage capacity be sufficient to store the entire daily design flow of the treatment works for the duration of the winter months, when land application may be restricted, with a minimum of 60 days storage capacity where adequate climatological data are not available.

11. Provide calculations justifying the land area requirements for land application of sewage effluent taking into consideration average productivity group, crop(s) to be grown and most limiting factor(s), specifically PAN, metal loadings, and Sodium Adsorption Ratio (SAR) or Exchangeable Sodium, where applicable. Demonstrate the most limiting factor for land application on an annual and site life basis.

Site Characterization

Note: A site characterization is required for each land application site on a field by field basis and for each storage facility. Site booklets organized by Operator/Land Owner and County are preferred.

Divide the land application site into individualized units of fields on the basis of agronomic management practices. For example, soils which are similar for productivity or pH adjustment which are adjacent to each other should be grouped as one field if they can be anticipated to receive effluent on similar schedules. Distinctly different soils which may require different agronomic management should be designated separately. For convenience in meeting permit reporting requirements, keep field units small.

12. Provide a general location map which clearly indicates the location of all the land application sites related to this permit application. (See General Instructions for Map Requirements.)
13. Provide a topographic map of sufficient scale (5 foot contour preferred) clearly showing the location of the following features within 0.25 mile of the site. More than one map may be required if the land application site(s) or treatment/storage facilities are not in close proximity. Provide a legend and approximate scale. Clearly mark field and property boundaries. (See Instructions for map requirements.)
 - a. Proposed or existing ground water monitoring wells
 - b. General direction of ground water movement
 - c. Water wells, abandoned or operating
 - d. Surface waters
 - e. Springs
 - f. Public water supply(s)
 - g. Sinkholes
 - h. Underground and/or surface mines
 - i. Mine pool (or other) surface water discharge points
 - j. Mining spoil piles and mine dumps
 - k. Quarry(s)
 - l. Sand and gravel pits
 - m. Gas and oil wells
 - n. Diversion ditch(s)
 - o. Agricultural drainage ditch(s)

- p. Occupied dwellings, including industrial and commercial establishments
- q. Landfills or dumps
- r. Other unlined impoundments
- s. Septic tanks and drainfields
- t. Injection wells
- u. Rock outcrops

14. For each land application site, provide a site plan, preferably topographically based, of sufficient detail to clearly show any landscape features which require buffer zones or may limit land application. Clearly show the field boundaries, property lines, and the location of any subsurface agricultural drainage tile, as appropriate.

Provide a site plan legend which identifies the following landscape features:

- a. Drainageways
- b. Rock outcrops
- c. Sink holes
- d. Drinking water wells and springs
- e. Monitoring wells
- f. Property lines
- g. Roadways
- h. Occupied dwellings
- i. Slopes (greater than 8% by slope class)
- j. Wet spots
- k. Severe erosion
- l. Frequently flooded soils (SCS designation)
- m. Surface waters

15. Provide a detailed soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)

Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions should include the following information:

- a. Soil symbol
- b. Soil series, textural phase and slope class
- c. Depth to seasonal high water table
- d. Depth to bedrock
- e. Estimated productivity group (for the proposed crop rotation).
- f. Estimated infiltration rate (surface soil)
- g. Estimated permeability of most restrictive subsoil layer

16. Representative soil borings and test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

- a. Soil symbol
- b. Soil series, textural phase and slope class
- c. Depth to seasonal high water table
- d. Depth to bedrock
- e. Estimated productivity group (for the proposed crop rotation).
- f. Estimated infiltration rate (surface soil)
- g. Estimated permeability of most restrictive subsoil layer

17. Collect and analyze soil samples for the following parameters for each field, weighted to best represent each of the soil borings performed for Item I6.
- a. Soil organic matter (%)
 - b. Soil pH (std. units)
 - c. Cation exchange capacity (meg/100g)
 - d. Total nitrogen (ppm)
 - e. Organic nitrogen (ppm)
 - f. Ammonia nitrogen (ppm)
 - g. Nitrate nitrogen (ppm)
 - h. Available phosphorus (ppm)
 - i. Exchangeable sodium (mg/100g)
 - j. Exchangeable calcium (mg/100g)
 - k. Copper (ppm)
 - l. Nickel (ppm)
 - m. Zinc (ppm)
 - n. Cadmium (ppm)
 - o. Lead (ppm)
 - p. Chromium (ppm)
 - q. Manganese (ppm)
 - r. Particle size analysis or USDA textural estimate (%)
 - s. Hydraulic conductivity (in/hr.)

Crop and Site Management

18. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from effluent and chemical fertilizers.
- If the effluent may be expected to possess unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.
19. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

FORM D

MUNICIPAL WASTE

PART D-II INFREQUENT LAND APPLICATION OF SEWAGE SLUDGE

General Information

1. Facility name. Name given on Form A.
2. A general description of the proposed plan including: name, VPDES (NPDES) permit number, and location of the generator(s) involved, sludge treatment and handling processes, means of sludge transport or conveyance, location and volume of storage proposed, general location of sites proposed for application and methods of sludge application proposed. A description of temporary storage methods should be provided.
3. Describe the method of sludge treatment or stabilization for each sludge source. Provide a block diagram of each wastewater treatment plant's residual treatment train and yearly sludge production. In addition, provide the design flow of each facility.
4. Briefly describe the disposal of any supernatant resulting from sludge storage.
5. Describe all land application methods and any equipment used in the process (e.g. transport trucks, spreaders, etc.).
6. Provide a legible copy of any leasing agreements related to the treatment or storage facilities, not under direct ownership of the applicant, which identifies the involved parties.

Design Information

Waste Characterization

7. Provide a sewage sludge characterization in accordance with Part D-V for each sludge. For a proposed facility, estimates based on data obtained from other similar facilities may be used. More than one sample may be required if the sludge may be expected to exhibit seasonal variation.
8. Provide a properly completed Non-Hazardous Declaration Statement for each sludge, Part D-VI.
9. Provide calculations describing the nutrient value of the sludge as lbs per dry Ton nitrogen (PAN), and Calcium Carbonate Equivalence, if applicable.

Sludge Storage Facilities

10. Describe the current status of the available sludge storage facilities. List in a tabular format the sludge storage facilities by location, total storage capacity(s), and the sludge contracts currently permitted or assigned to these facilities.

11. For proposed storage facilities, provide a topographic map of sufficient scale to clearly show the topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property lines. (See General Instructions for map requirements.)
 - a. Water wells, abandoned or operating
 - b. Surface waters
 - c. Springs
 - d. Public water supply(s)
 - e. Sinkholes
 - f. Underground and/or surface mines
 - g. Mine pool (or other) surface water discharge points
 - h. Mining spoil piles and mine dumps
 - i. Quarry(s)
 - j. Sand and gravel pits
 - k. Gas and oil wells
 - l. Diversion ditch(s)
 - m. Agricultural drainage ditch(s)
 - n. Occupied dwellings, including industrial and commercial establishments
 - o. Landfills or dumps
 - p. Other unlined impoundments
 - q. Septic tanks and drainfields
 - r. Injection wells
 - s. Rock outcrops

Land Area Requirements and Summary

12. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average productivity group, crop(s) to be grown and most limiting factor(s), specifically PAN, Calcium Carbonate Equivalence and metal loadings, where applicable. Demonstrate the most limiting factor, PAN, CCE, and metal loadings for land application.
13. List by County and owner all of the fields, (net) acreages, and tract number related to this permit application, and the last date of sludge application. Please report the data in the following format:

COUNTY	OWNER	OPERATOR	FIELD *TRACT NO.	ACRES	DATE OF LAST APPLICATION
King	Charles	Bill Jones	1	6.9	8/22/89
George	Jones		2	12.3	8/22/89
*Agricultural Stabilization and Conservation Service tract					

Site Characterization

Note: A site characterization is required for each land application site on a field by field basis and for each storage facility. Site booklets organized by Operator/Land Owner and County are preferred.

Divide the land application site into individualized units or fields on the basis of agronomic management practices. For example, soils which are similar for productivity or pH adjustment which are adjacent to each other should be grouped as one field if they can be anticipated to receive sludge on similar schedules. Distinctly different soils which may require different agronomic management should be designated separately. For convenience in meeting permit reporting requirements, it is suggested that field units be small.

14. Provide a general location map for each County which clearly indicates the location of all the land application sites related to this permit application. (See General Instructions for map requirements.)
15. Provide a properly completed Sludge Application Agreement Form for each land owner, Part D-VII.
16. For each land application site provide a site plan of sufficient detail to clearly show any landscape features which will require buffer zones or may limit land application. Provide a legend and clearly mark the field boundaries and property lines. The following landscape features should be delineated. (See General Instructions for map requirements.)
 - a. Drainageways
 - b. Rock outcrops
 - c. Sink holes
 - d. Drinking water wells and springs
 - e. Monitoring wells
 - f. Property lines
 - g. Roadways
 - h. Occupied dwellings
 - i. Slopes (greater than 8% by slope class)
 - j. Wet spots
 - k. Severe erosion (SCS designation)
 - l. Frequently flooded soils (SCS designation)
 - m. Surface waters
17. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)

Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

- a. Soil symbol
- b. Soil series, textural phase and slope class
- c. Depth to seasonal high water table
- d. Depth to bedrock
- e. Estimated productivity group (for the proposed crop rotation)

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

FORM D

MUNICIPAL WASTE

PART D-III FREQUENT LAND APPLICATION OF SEWAGE SLUDGE

General Information

1. Facility name. Name given on Form A.
2. A general description of the proposed plan including: name, VPDES (NPDES) permit number, and location of generator(s) involved, sludge treatment and handling processes, means of sludge transport or conveyance, location and volume of storage proposed, general location of sites proposed for application and methods of sludge application proposed. A description of temporary storage methods should be provided.
3. Describe the method of sludge treatment or stabilization for each sludge source. Provide a block diagram of each wastewater treatment plant, residual treatment train, and yearly sludge production. In addition, provide the design flow of each facility.
4. Briefly describe the disposal of any supernatant resulting from sludge storage.
5. Describe all land application methods and any equipment used in the process.
6. Provide a legible copy of any leasing agreements related to the treatment works or storage facilities, not under direct ownership of the applicant, which identifies the involved parties.

Design Information

Waste Characterization

7. Provide a sewage sludge characterization in accordance with Part D-V for each sludge. For a proposed facility, estimates based on data obtained from other similar facilities may be used. More than one sample may be required if the sludge may be expected to exhibit diurnal or seasonal variation.
8. Provide a properly completed Non-Hazardous Declaration Statement for each sludge, Part D-VI.
9. Provide calculations describing the nutrient value of the sludge as lbs per dry Ton nitrogen (PAN), phosphorus (P_2O_5), potassium (K_2O), and Calcium Carbonate Equivalence, if applicable.

Sludge Storage Facilities

10. List in a tabular format the sludge storage facilities by location, total storage capacity(s), and the sludge contracts currently permitted or assigned to these facilities. Describe the current status of the available sludge storage facilities.

11. For proposed storage facilities, provide a topographic map of sufficient scale to clearly show the topographic features of the surrounding landscape to a distance of 0.25 miles. Clearly mark the property lines. (Reference General Instructions for map requirements.)

- a. Water wells, abandoned or operating
- b. Surface waters
- c. Springs
- d. Public water supply(s)
- e. Sinkholes
- f. Underground and/or surface mines
- g. Mine pool (or other) surface water discharge points
- h. Mining spoil piles and mine dumps
- i. Quarry(s)
- j. Sand and gravel pits
- k. Gas and oil wells
- l. Diversion ditch(s)
- m. Agricultural drainage ditch(s)
- n. Occupied dwellings, including industrial and commercial establishments
- o. Landfills or dumps
- p. Other unlined impoundments
- q. Septic tanks and drainfields
- r. Injection wells
- s. Rock outcrops

12. Provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage, contractual agreements, sludge production and land application. Include pertinent calculations justifying storage requirements.

Land Area Requirements

13. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average productivity group, crop(s) to be grown and most limiting factor(s), specifically PAN, Calcium Carbonate Equivalence and metal loadings, where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

14. List by County and owner all of the fields and (net) acreages, and tract numbers related to this permit application and the last date of sludge application. Please report the data in the following format:

COUNTY	OWNER	OPERATOR	FIELD *TRACT NO.	ACRES	DATE OF LAST APPLICATION
King	Charles	Bill Jones	1	6.9	8/22/89
George	Jones		2	12.3	8/22/89
*Agricultural Stabilization and Conservation Service tract					

Site Characterization

Note: A site characterization is required for each land application site on a field-by-field basis and for each storage facility. Site booklets organized by Operator/Land Owner and County are preferred.

Divide the land application site into individualized units or fields on the basis of agronomic management practices. For example, soils which are similar for productivity or pH adjustment which are adjacent to each other should be grouped as one field if they can be anticipated to receive sludge on similar schedules. Distinctly different soils which may require different agronomic management should be designated separately. For convenience in meeting permit reporting requirements, keep field units small.

15. Provide a general location map for each County which clearly indicates the location of all the land application sites related to this permit application.
16. Provide a properly completed Sludge Application Agreement Form for each land owner, Part D-VII.
17. For land application sites, provide a topographic map of sufficient scale (five foot contour preferred) clearly showing the following features within 0.25 miles of each site. Clearly mark field and property boundaries. (See General Instructions for map requirements.)
 - a. Proposed or existing ground water monitoring wells
 - b. Water wells, abandoned or operating
 - c. Surface waters
 - d. Springs
 - e. Public water supply(s)
 - f. Sinkholes
 - g. Underground and/or surface mines
 - h. Mine pool (or other) surface water discharge points
 - i. Mining spoil piles and mine dumps
 - j. Quarry(s)
 - k. Sand and gravel pits
 - l. Gas and oil wells
 - m. Diversion ditch(s)
 - n. Agricultural drainage ditch(s)
 - o. Occupied dwellings, including industrial and commercial establishments
 - p. Landfills or dumps
 - q. Other unlined impoundments
 - r. Septic tanks and drainfields
 - s. Injection wells
 - t. Rock outcrops
18. Provide a site plan, preferably topographically based, of sufficient detail to clearly show any landscape feature which require buffer zones or may limit land application. Clearly show the field boundaries, property lines, and the location of any subsurface agricultural drain tile, as appropriate.

Provide a site plan legend which identifies the appropriate buffer zones to be used. Some of the landscape features which should be delineated are:

- a. Drainageways
- b. Rock outcrops
- c. Sink holes
- d. Drinking water wells and springs
- e. Monitoring wells
- f. Property lines
- g. Roadways

- h. Occupied dwellings
- i. Slopes (greater than 8% by slope class)
- j. Wet spots
- k. Severe erosion (SCS designation)
- l. Frequently flooded soils (SCS designation)
- m. Surface waters

19. Provide a detailed soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)

Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon of each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

- a. Soil symbol
- b. Soil series, textural phase and slope class
- c. Depth to seasonal high water table
- d. Depth to bedrock
- e. Estimated productivity group (for the proposed crop rotation)

20. Representative soil borings and test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

- a. Soil symbol
- b. Soil series, textural phase and slope class
- c. Depth to seasonal high water table
- d. Depth to bedrock
- e. Estimated productivity group (for the proposed crop rotation)

21. Collect and analyze soil samples each field in accordance with the chart on page D-III-6, weighted to best represent each of the soil borings performed for Item 20.

Crop and Site Management

22. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH.

If the sludge may be expected to possess an unusually high Calcium Carbonate Equivalence or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.

23. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

SOIL SAMPLE TEST PARAMETERS FOR LAND APPLICATION SITES¹

Industrial Operations	Sludge Freq. Below Ag. Rates ²	Sludge Freq. at Ag. Rates ³
Soil Organic Matter (%)		*
Soil pH (Std. Units)	*	*
Cation Exchange Capacity (meg/100g)	*	*
Total Nitrogen (ppm)		*
Organic Nitrogen (ppm)		*
Ammonia Nitrogen (ppm)		*
Nitrate Nitrogen (ppm)		*
Available Phosphorus (ppm)	*	*
Exchangeable Potassium mg/100g	*	*
Exchangeable Sodium (mg/100g)		*
Exchangeable Calcium (mg/100g)		*
Exchangeable Magnesium (mg/100g)		*
Copper (ppm)		*
Nickel (ppm)		*
Zinc (ppm)		*
Cadmium (ppm)		*
Lead (ppm)		*
Chromium (ppm)		*
Manganese (ppm)		*
Particle Size Analysis or USDA Textural Estimate (%)		*
Hydraulic Conductivity (in/hr)		

NOTE: ¹ Unless otherwise stated, analysis shall be reported on a dry weight basis.

² Less than 70% of agronomic nitrogen rates (annual basis).

³ Test requirements will be adjusted based on previous test results

* Test for these parameters.

VIRGINIA POLLUTION ABATEMENT APPLICATION

FORM D

MUNICIPAL WASTE

PART D-IV EFFLUENT CHARACTERIZATION FORM

1. Facility Name: _____
2. Source or Generator: _____
3. Type of Treatment: _____
4. Degree of Treatment: _____
5. Provide at least one analysis for each parameter listed under effluent.
Upon review, additional analyses may be required by DEQ.

<u>Parameter</u>	<u>Effluent</u>
BOD ₅	_____ mg/l
TSS	_____ mg/l
TRC	_____ mg/l
Percent Solids	_____ %
pH	_____ S.U.
Nitrogen, (Nitrate)	_____ mg/l
Nitrogen, (Ammonium)	_____ mg/l
Nitrogen, (Total Kjeldahl)	_____ mg/l
Phosphorus, (Total)	_____ mg/l
Potassium, (Total)	_____ mg/l
Sodium	_____ mg/l

6. Provide at least one analysis of any other pollutants which you believe may be present in the effluent. Upon review, additional analyses may be required by DEQ.

<u>Parameter</u>	<u>Effluent</u>
Lead	_____ mg/l
Cadmium	_____ mg/l
Copper	_____ mg/l
Nickel	_____ mg/l
Zinc	_____ mg/l
Other	_____ mg/l

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION
FORM D

MUNICIPAL WASTE

PART D-V SLUDGE CHARACTERIZATION FORM

1. Facility Name: _____
2. Source or Generator: _____
3. Type of Treatment: _____
4. Sludge Treatment Classification: _____
5. Provide at least one analysis for each parameter. Upon review, additional analyses may be required by DEQ.

<u>Parameter</u>	<u>Sludge</u>
Percent Solids	_____ %
Volatile Solids	_____ %
pH	_____ S.U.
Alkalinity as CaCO ₃ *	_____ mg/kg
Nitrogen, (Nitrate)	_____ mg/kg
Nitrogen, (Ammonium)	_____ mg/kg
Nitrogen, (Total Kjeldahl)	_____ mg/kg
Phosphorus, (Total)	_____ mg/kg
Potassium, (Total)	_____ mg/kg
Lead	_____ mg/kg
Cadmium	_____ mg/kg
Copper	_____ mg/kg
Nickel	_____ mg/kg
Zinc	_____ mg/kg
Arsenic	_____ mg/kg
Boron	_____ mg/kg
Chromium	_____ mg/kg
Mercury	_____ mg/kg
Aluminum	_____ mg/kg
Chlorides	_____ mg/kg
Manganese	_____ mg/kg
Calcium	_____ mg/kg
Sulfates	_____ mg/kg
Molybdenum	_____ mg/kg
PCBs	_____ mg/kg

* Lime treated sludges (10% or more lime by dry weight) should be analyzed for percent CaCO₃.

6. Provide at least one analysis of any other pollutants which you believe may be present in the sludge. Upon review, additional analyses may be required by DEQ.

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

PART D-VI NON-HAZARDOUS WASTE DECLARATION

For waste to be land applied, a responsible person, as defined by VR 680-14-01, must sign the following statement.

I certify that the waste described in this application is non-hazardous and not regulated under the Resource Conservation and Recovery Act.

(Signature of Owner) Date: _____

VIRGINIA POLLUTION ABATEMENT (VPA) PERMIT APPLICATION

VPA FORM D MUNICIPAL WASTE

PART D-VII SLUDGE APPLICATION AGREEMENT

This sludge application agreement is made on _____ between _____, referred to here as "landowner", and _____, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as _____ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of stabilized sewage sludge on landowner's land in amounts and in a manner authorized by (VPA) (VPDES) permit number _____ which is held by the Permittee.

Landowner acknowledges that the appropriate application of stabilized sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health:

1. Public access to landowner's land upon which sludge has been applied should be controlled for at least 12 months following any application of sludge;
2. No root crops shall be grown for a period of time established by state or federal regulations and no other crops for direct human consumption (not processed to eliminate pathogens) should be grown on landowner's land within 18 months of a sludge application;
3. Landowner's land should not be excavated within 12 months of a sludge application;
4. Beef cattle should not be grazed or fed chopped foliage in accordance with access restrictions determined by the level of sludge treatment and milk cattle should be similarly restricted for a minimum of 60 days;
5. Supplemental commercial fertilizer or manure applications should be coordinated with the sludge applications such that the total crop needs for nutrients are not exceeded as identified on the nutrient balance sheet (see attached) to be supplied to the landowner by the owner at the time of application of sludge to a specific permitted site;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land that has received sludge applications.

Permittee agrees to notify landowner or landowner designee of the proposed schedule for sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:

Permittee:

EXAMPLE OF A NUTRIENT BALANCE SHEET

Year	Crop	Crop Needs N-P ₂ O ₅ -K ₂ O	Sludge Supplied N-P ₂ O ₅ -K ₂ O	Balance Needed From Fertilizer N-P ₂ O ₅ -K ₂ O	Notes
1992	Corn	140-50-80	140-70-10	0-0-70	1.
1993	Wheat- Soybeans	100-90-140	70-90-0	30-0-140	2.,3.

NOTES:

1. The supplied information above should be used as a guide to coordinate manure and/or fertilizer applications if needed with the sludge supplied nutrients. Crop needs are based upon Virginia Tech recommendations for your soil sample results and the predominant (10% or more of acreage) soil series in your field.

2. Significant residual nitrogen and phosphorus is supplied by sewage sludge in the second year following application.

3. Apply 140 pounds potash in fall or winter to small grain, apply 30 pounds nitrogen to small grain in late winter or early spring if needed.